RESPONSE TO RFA # EPA-OAR-OAQPS-21-03

For:

ENVIRONMENTAL PROTECTION AGENCY (EPA)
2021 Targeted Air Shed Grant Program

Project Title: **Commercial Lawn and Garden Equipment Incentive & Exchange Program**

Applicant Name: South Coast Air Quality Management District
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DUNS Number: 025986159

Total Project Cost:

EPA Funding Requested	Voluntary Cost Share	Leveraged Funds	Total Project Cost	Project Period
$2,167,935.81	**$1,169,168.78**	**$1,000,000**	**$4,337,104.59**	**January 2022 to January 2025**

Project Description: South Coast AQMD is proposing a Commercial Lawn and Garden Equipment Incentive and Exchange Program focusing on the exchange of gasoline- or diesel-powered commercial grade lawn and garden equipment for new zero-emission, battery-electric equipment, for local governments, school districts and colleges, non-profit organizations, and commercial landscapers/gardeners and private entities with full-time gardening staff.

Project Location: The proposed project location for the Commercial Lawn and Garden Equipment Incentive and Exchange Program will be in the Ozone Nonattainment Area of Coachella Valley and the urban areas of Riverside County, California.

PROJECT NARRATIVE

The South Coast Air Quality Management District (South Coast AQMD) is submitting "Commercial Lawn and Garden Equipment Incentive & Exchange Program" application in response to the EPA "2021 Targeted Air Shed Grant Program" (EPA OAR-OAQPS-21-03) Request for Applications (RFA) pertaining to the Coachella Valley and the urban areas of Riverside County, California. The South Coast AQMD is the regional air quality agency responsible for Orange and the urban portions of Los Angeles, San Bernardino, and Riverside Counties. This area of 10,743 square miles is home to over 17 million people – about half the population of the state of California. It is the second most populated urban area in the United States and encompasses over 130 cities. The South Coast AQMD has regulatory responsibility for more than 100,000 businesses operating stationary sources, of which about 30,000 have air quality permits. Despite decades of aggressive efforts to reduce air pollution from stationary sources, the SCAB continues to have some of the worst air quality in the U.S. based on the number of days the National Ambient Air Quality Standards (NAAQS) for ozone are exceeded. Currently, the SCAB, western parts of Mojave Desert Air Basin (MDAB) and Coachella Valley portion of the Salton Sea Air Basin (SSAB) have areas in non-attainment for ozone and particulate matter (PM2.5). In addition, the 2021 Targeted Air Shed Grant has ranked the urban portion of the SCAB (counties of Los Angeles, Orange, and San Bernardino) in the top five most polluted area relative to ozone and annual PM2.5 standards. The most effective way to reduce air pollution impacts on the health of the SCAB's residents, including those in disproportionally impacted and environmental justice communities (EJCs) that are concentrated along the numerous transportation corridors and goods movement facilities, is to reduce emissions from mobile sources, both on-road and off-road, the principal contributor to the SCAB's air quality challenges. Consequently, the South Coast AQMD continues to work closely with the California Air Resources (CARB) and the U.S. EPA who have primary responsibility for these mobile sources.

The South Coast AQMD in collaboration with the California Air Resources Board (CARB) and the Southern California Association of Governments has developed the 2016 Air Quality Management Plan (AQMP). The 2016 AQMP provides a pathway to attainment of the federal ozone and PM2.5 standards within the Basin along with compliance pathways for SSAB. The 2016 AQMP has been submitted as part of the statewide SIP to EPA for review and approved in 2017 (South Coast Air Quality Management District, 2016).

In developing the 2016 AQMP, stationary and mobile source control measures establish the pathway to attainment through specific emission reductions from different economic sectors and emission source types. In previous AQMPs, a "black box" commitment described emission sources that needed further technological development to be widely implemented for reductions to occur. Within the 2016 AQMP there still remains some new technology development needed, largely within the off-road mobile transportation sources; however, the technological pathways to comply with the Federal National Ambient Air Quality Standards (NAAQS) are identified and implementation of new technologies is critical to achieving emissions reductions.

Within the 2016 AQMP emissions inventory, the lawn and garden categories are a significant source of ozone and PM2.5 precursor pollutants. The lawn and garden categories account for 7.5% VOCs, 0.8% PM2.5, 11.6% CO, and 1% NOx of the total 2012 annual average emissions inventory (Figure 1). The large amount of emissions from this equipment category, in part, results from the durability of this equipment. Since this equipment is modular, the small engines, carburetors, and other mechanical pieces are often replaced, rebuilt, and/or continue to operate with un-tuned engines. In the commercial sector this equipment is used for multiple hours a day, and the moderate winter climate within Southern California promotes the use of this equipment year-round. Lastly, the use of these engines requires multiple emission sources which include fuel dispensing, evaporative emissions from small gasoline containers, evaporative emissions from the equipment, and combustion emissions associated with equipment operation. This equipment operates on both 2 and 4 stroke cycles and include both gasoline and diesel fueled engines. CARB has shown the emissions from this equipment category might be higher than the inventory reflects (California Air Resources Board, 2016).

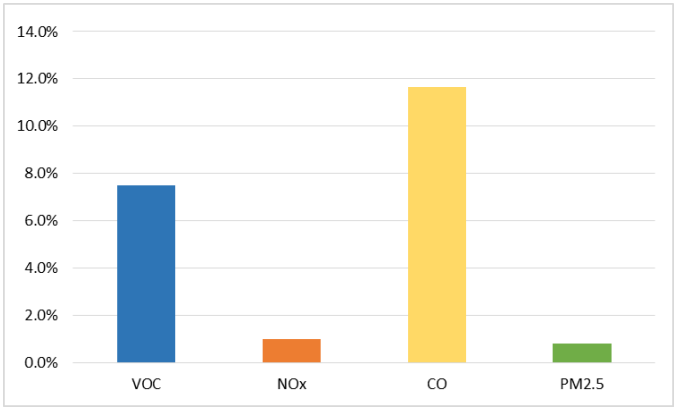

Figure 1: Percent Contribution of Lawn and Garden to Total Emissions (2012 Annual Average Inventory)

Under this proposal, the South Coast AQMD would incentivize and accelerate the replacement of the older commercial lawn and garden equipment with the latest zero-emission battery electric commercial grade equipment within the Coachella Valley and the urban areas of Riverside County, CA. The proposed program will widely implement new zero-emission technologies that can achieve greater emission reductions than any new internal combustion engine. Since April 2018, South Coast AQMD has been implementing the Commercial Lawn and Garden Equipment Incentive & Exchange Program for the South Coast Air Basin. Utilizing approximately $2.4 million from the EPA's 2016 Targeted Air Shed Grant Program and funding from within South Coast AQMD's Air Quality Investment Program, a point of sale discount of up to 75% has been provided to eligible entities to replace older commercial-grade lawn and garden equipment. To date, approximately 5,800 commercial-grade lawn and garden equipment has been exchanged under this program. In addition, for over 4 years, the South Coast AQMD has also implemented the Residential Electric Lawn Mower Rebate Program, which has replaced over 2,000 gasoline-powered residential mowers. Also, prior to the Residential Electric Lawn Mower Rebate Program, South Coast AQMD implemented the lawn mower exchange program for 13 years, which placed over 55,000 battery operated residential mowers in use, and through the exchange events, scrapped an equivalent number of gasoline residential mowers (Figure 2).

Figure 2: Scrapped Lawn Mowers from South Coast AQMD Lawnmower Exchange Event

These incentive programs have been successful and were typically oversubscribed. South Coast AQMD seeks to continue to replicate this success with a similar exchange program within the Coachella Valley and the urban areas of Riverside County. The program will be for local government agencies, non-profits, schools, commercial gardeners and landscapers, and private entities with full-time in-house gardening staff. Implementation of this project is estimated to reduce 9.1 tons of PM2.5, 164.5 tons of VOC, 152.6 tons of NOx, 19,979.5 tons of CO2, 8,434.7 tons of CO and 0.6 tons of SO2 annually.

The incentive program presented in this proposal will help EJ and DAC residents by accelerating clean air efforts in their areas and will also help local government agencies and commercial gardeners and landscapers by offsetting some of the costs of pollution reduction strategies, promoting more livable neighborhoods, and helping local businesses incorporate newer equipment and technologies with lower operating costs. This project will help several thousand Southern California businesses, local governments, and non-profits reduce their emissions footprint and improve air quality for children at schools. The emission reduction objectives in this program are consistent with the Goals # 1 and 3 of the EPA's FY 2014-2018 Strategic Plan (U.S. Environmental Protection Agency, 2014).

The South Coast AQMD staff has extensive experience in undertaking incentive program projects with zero-emission lawn and garden equipment (Figure 3). The proposed Commercial Lawn and Garden Equipment Incentive & Exchange Program may be leveraged with other funds to create greater air quality benefits and to accelerate the implementation of zero-emitting commercial electric lawn and garden equipment. Recent experience with EPA's Targeted Air Shed Grant Program awarded in 2017 and South Coast AQMD's current implementation experience with the Commercial Lawn and Garden Equipment Incentive & Exchange Program has helped develop the proposed incentive program focusing on commercial equipment users.

Figure 3: Commercial Battery Electric Lawn and Garden Products

Section 1 Project Summary and Approach

(1-A) Detailed Project Summary:

Gasoline and diesel-powered lawn and garden equipment are a significant source of air pollutants (CO, NOx, $PM_{2.5}$, VOCs), toxic air contaminants, and greenhouse gases (Christensen, 2001). In 2008, the EPA implemented its regulation "Control of Emissions from Non-Road Spark-Ignition Engines and Equipment" specifically for gasoline powered lawn and garden equipment (*Ref.* EPA 40 CFR).

Commercial lawn and garden equipment have significantly higher emissions per piece of equipment due to their high usage relative to residential equipment.

The Zero-Emission Commercial Lawn and Garden Equipment Incentive and Exchange Program would be available to local government agencies, schools, commercial gardeners and landscapers, non-profits, and private entities with full-time in-house gardening staff who reside or are located within Coachella Valley and urban areas of Riverside County. Eligibility to receive new commercial-grade electric lawn and garden equipment is dependent upon bringing equivalent operable gasoline or diesel lawn and garden equipment for exchange and paying a percentage of the new equipment cost. Under this program, turning in one or two small gasoline storage containers along with old equipment will be required. The old operable equipment is collected by a scrapping yard contracted with the South Coast AQMD and made inoperable. An inventory of all scrapped and new equipment will be developed to help determine emission benefits from this program. This information will include horsepower rating, fuel type, and estimated annual hours of operation.

By exchanging the old equipment, local governments, schools, commercial gardeners and landscapers, and private entities with full-time in-house gardening staff will be eligible to receive an equipment buy down incentive up to 50% of the equipment cost. This incentive will cover the incremental cost of switching from gas or diesel to electric equipment. Lastly, it is anticipated that manufacturers accepted into the program, through a response to a South Coast AQMD RFP, will discount equipment prices. In past programs, this has generally resulted in 20% equipment discounts along with longer warranty periods.

Local governments participating in this program will be required to report back to South Coast AQMD on the use of their commercial electric mowers to track user experience and fuel savings. This information will help develop future incentive and/or financing programs to further promote this technology.

Additional efforts and eligible participants are encouraged to utilize other available funding opportunities in conjunction with this program to purchase equipment. It is anticipated that approximately 4,000 pieces of equipment will be replaced with the proposed $2 million dollars and other leveraged funds.

The timeline for completion of the project and technical milestones are outlined in Table 3. This incentive program falls under the draft control measure MOB-11 Extended Exchange Program – Small Off-Road Engines (SORE) and Larger Diesel-Powered Lawn and Garden Equipment within the SCAQMD 2016 AQMP.

(1-B) Analysis of Emissions Inventory & Progress Towards Attainment:

Incentivizing the switch from gasoline or diesel lawn and garden equipment to zero-emissions commercial electric equipment will provide significant air quality benefits along with helping to further develop the market for this new technology. This proposed program is anticipated to reduce 9.1 tons of PM2.5, 164.5 tons of VOC, 152.6 tons of NOx, 19,979.5 tons of CO2, 8,434.7 tons of CO and 0.6 tons of SO2 annually. Additional benefits of battery-operated electric lawn and garden equipment include operational noise at less than half the gasoline equivalents, reduced ongoing maintenance, reduced fuel costs and overall promoting accelerated turn-over of the in-use high pollution lawn and garden equipment for the newest technologies.

Emissions reductions addressed by the proposed program are summarized below in Table 1.

Table 1. Emissions Source Categories and Criteria Pollutants

Eligible Participants	Sources	Pollutants
Local Governments, Non-profits, Schools	Small Off-Road Engines (SORE)	$PM_{2.5}$, VOC, NO_x, CO_2 SO_2, CO
Commercial Gardeners and Landscapers	Small Off-Road Engines (SORE)	$PM_{2.5}$, VOC, NO_x, CO_2, SO_2, CO
Private entities with full-time in-house gardening staff	Small Off-Road Engines (SORE)	$PM_{2.5}$, VOC, NO_x, CO_2, SO_2, CO

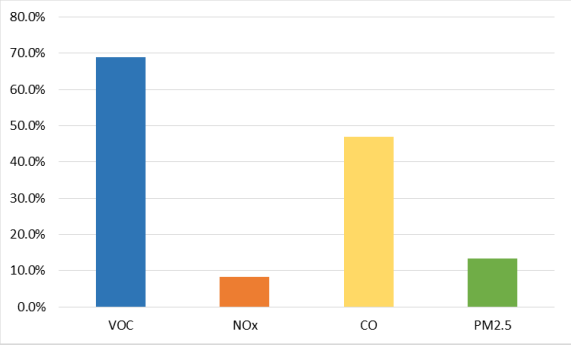

Figure 4: Percent Contribution of Lawn and Garden to Off-Road Emissions (2012 Annual Average Inventory)

Equipment replaced under this program falls in the SORE category within the off-road emissions inventory. The SORE category, in part, includes equipment used in lawn and garden, airport ground support, golf carts, and other specialty vehicles. Emissions from lawn and garden equipment are the largest source within the SORE category and, as shown in Figure 1 and 6, are a significant source of emissions within the entire and off-road inventories.

(1-C) Consideration of Activities:

The proposed activities will bring broader environmental, economic, public health and social benefits to the Coachella Valley and the urban areas of Riverside County:

- **Air Quality Benefits:** Directly removes older gasoline and diesel-powered lawn and garden equipment for zero-emission equipment and direct emission reductions of $PM_{2.5}$, VOC, NO_x, CO_2 SO_2, CO. In addition, evaporative fugitive emissions from the equipment, fuel containers and fuel dispensing are reduced.
- **Other Benefits:** The exchanged lawn and garden equipment incentivizes the newest technology equipment that likely would not have been considered by end use operators. Participants would also benefit from electric equipment which requires less maintenance, lower operating costs and fuel costs savings. Community benefits aside from improved air quality include decreased noise from the operation of this equipment.
- **Potential Audience Served:** The proposed program would target local governments, non-profits, schools, commercial gardeners and landscapers, and private entities with full-time in-house gardening staff who reside or serve in the nonattainment areas within the Basin and SSAB.

(1-D) Progress Towards Attainment:

Detailed inventory analysis of the emission reductions can be found in attachment 6-a and highlighted in Table 1 in section 3-A of this narrative. The proposed Commercial Lawn and Garden Equipment Incentive & Exchange Program will provide significant annual emission reductions to the Ozone Nonattainment Area of Coachella Valley and the surrounding urban areas of Riverside County, California, as well as minimize harmful exposure to equipment users. In addition to the immediate emission reductions, the program will serve to promote the accelerated use of zero-emission technologies currently available on the market.

The environmental outcomes from this project are consistent with multiple goals in EPA's FY 2014-2018 Strategic Plan (U.S. Environmental Protection Agency, 2014). Under this program both criteria and climate pollutants will be reduced, consistent with goal #1, and communities using this equipment will be cleaner, have improved livability, along with becoming more sustainable through reduced fuels consumption, consistent with goal #3.

(1-E) Roles and Responsibilities of South Coast AQMD and Partners:

The South Coast AQMD staff will monitor progress of the program and submit annual reports to EPA. South Coast AQMD will work with EPA on outreach material and any press related events to ensure EPA receives recognition for this program. Annual reports will contain accomplishments and other pertinent information. The South Coast AQMD will also submit to EPA a final performance report, within 30 days following the expiration of the grant project period. The report shall be submitted to the EPA Project Officer and may be submitted electronically. The report shall generally contain the same information as in the annual reports but will cover the entire project period.

Specifically, South Coast AQMD staff will establish contracts with commercial electric lawn and garden equipment manufacturers. This will establish the quantities, types of equipment available for the program, minimum performance requirements, and prices for the different types of lawn and garden equipment offered. In addition, the manufacturers will help provide promotional material for the exchanges and be responsible for delivery of the equipment to the events. A contract will also be established with a scrapping yard that has the ability to

make the gasoline or diesel-powered lawn and garden equipment inoperable and recycle them in an environmentally responsible manner. The quarterly report will include the number and types of equipment exchanged, associated fuel, and emission reductions.

Section 2 Environmental Justice

(2-A) Environmental Justice Issues and Environmental Health Disparities:

The purpose of South Coast AQMD's EJ program is to ensure that everyone has the right to equal protection from air pollution and fair access to the decision-making process that works to improve the quality of air within their communities. EJ, has been defined by South Coast AQMD as: "equitable environmental policymaking and enforcement policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution." The history of South Coast AQMD's EJ program began in 1997. The programs and initiatives have been continually reviewed to keep the EJ programs moving forward. One important component of that review process is the Environmental Justice Advisory Group (EJAG), which serves as an advisory group to the South Coast AQMD Governing Board. The mission of EJAG is to advise and assist South Coast AQMD in protecting and improving public health in South Coast AQMD's most impacted communities through the reduction and prevention of air pollution.

An EJ community is consistent with the latest Carl Moyer definition for the Basin and Coachella Valley, and includes poverty and air quality criteria that must both be met and is defined as follows:

Poverty Criteria

An area where at least 10 percent of the population falls below the Federal Poverty Level, based on the most recently published American Community Survey data, and

Air Quality Criteria

- Basin
    A. The highest 15th percentile of $PM_{2.5}$ concentration measurements interpolated to a two (2) kilometer grid of the most recently published final Multiple Air Toxics Emissions Study (MATES) modeling domain; or
    B. The highest 15th percentile of cancer risk as calculated in the most recently published final MATES.
- Coachella Valley (CV)
    A. The highest 15th percentile of PM10 concentration in CV

The South Coast Air Basin contains numerous communities experiencing disproportionate environmental impacts. The incentive programs identified in this proposal will help these communities by accelerating clean air efforts in the area and will also help residences and organizations that may be more economically challenged by offsetting some of the costs of pollution reduction strategies while also promoting more livable neighborhoods and helping local businesses incorporate newer equipment and technologies.

(2-B) Community Engagement:

South Coast AQMD staff has been actively engaging the Coachella Valley community, specially with Eastern Coachella Valley (ECV), as part of the South Coast AQMD's implementation of the AB 617 Community Air Protection Program. As an CARB-approved Year 2 AB 617 community, staff has hosted numerous ECV community meetings with Community Steering Committee members to address community concerns and have collaborated and developed the ECV Community Emission Reduction Plan (CERP). Staff continues to host community meetings and will be updating the community on the benefits of the proposed Commercial Lawn and Garden Equipment Incentive & Exchange Program pending EPA approval.

(3) Environmental Results – Outputs, Outcomes and Performance Measures

(3-A) Expected Project Output and Outcomes:

The expected output and outcomes from South Coast AQMD's proposal are highlighted in Table 2 and 3 below:

Table 2*: Expected Outcomes and Output – Yearly Emission Reduction

Equipment Type	Equipment Exchanged	Emission Reductions (tons per year)					
		$PM_{2.5}$	VOC	NOx	CO_2	SO_2	CO
Commercial Turf Equipment	1,300	8.9	154.5	152.2	19,881.1	0.56	8,399
Leaf Blowers	25	0.0	0.2	0.02	3.2	0.0	0.7
Lawn Mowers	150	0.2	0.9	0.2	46.7	0.0	16.9
Trimmers	150	0.0	0.5	0.05	7.4	0.0	2.9
Totals: Number of Equipment Exchanged and Minimum Emission Reductions Expected	1,725	9.1	156.1	152.5	19,938.4	0.56	8,419.5

*Number of equipment and emissions reduction estimates may change based on type of equipment selected and participant needs.

Table 3: Expected Outcomes and Output – Cost per Emission Reduction per Equipment Lifetime

Equipment Type	Cost per ton of emission reduction per equipment lifetime*					
	$PM_{2.5}$	VOC	NOx	CO_2	SO_2	CO
Commercial Turf Equipment	$119,586	$6,943	$7,047	$54	$1,925,219	$128
Leaf Blowers	$410,904	$5,264	$59,515	$312	$11,157,497	$1,399
Lawn Mowers	$50,875	$8,110	$31,339	$160	$4,238,717	$444
Trimmers	$1,328,114	$8,700	$92,164	$613	$16,101,423	$1,572

*Lifetime is assumed to be 10 years. Actual equipment breakdown will vary once implemented, costs assume EPA funds only.

Participants in the Commercial Lawn and Garden Equipment Incentive & Exchange Program will realize cost savings from fuel usage and reduced costs for new zero-emissions equipment. Fuel savings are anticipated to be $495,500 per year with gasoline prices at $3/gallon.

(3-B) Expected Emissions Reductions:

The proposed program is anticipated to reduce 9.1 tons of PM2.5, 164.5 tons of VOC, 152.6 tons of NOx, 19,979.5 tons of CO2, 8,434.7 tons of CO and 0.6 tons of SO2 annually. The annual fuel savings from going to electric equipment is anticipated to be over 165,000 gallons of gasoline/diesel per year. Emission reductions are detailed in Table 1 above and account for both exhaust and evaporative emissions.

(3-C) Performance Measures and Plan:

Performance Measurements

The performance measurements, including annual reporting commitments for each program are summarized below.

Commercial Gardener and Landscaper Lawn and Garden Exchange – An estimated 1,300 gasoline or diesel commercial turf equipment, 25 gasoline leaf blowers and 300 gasoline lawn mowers and trimmers will be exchanged by local governments, school districts and colleges, non-profit organizations, and commercial landscapers/gardeners and private entities with full-time gardening staff and replaced with zero-emissions battery electric equipment. The proposed program and the exchange of older gasoline and diesel-powered lawn and garden is estimated to reduce 9.1 tons of PM2.5, 164.5 tons of VOC, 152.6 tons of NOx, 19,979.5 tons of CO2, 8,434.7 tons of CO and 0.6 tons of SO2 annually. Participants will be required to provide fuel usage data for the old replaced equipment for comparable months. On an annual basis, South Coast AQMD will report the number of commercial-grade lawn and garden equipment replaced with zero-emission alternatives, emission reductions, and funds spent along with any difficulties implementing the program.

(3-D) Timeline and Milestones:

The detailed project plan is divided into four major tasks: award approval and contract execution, implementation, monitoring and tracking and final assessment and reporting. The timeline for completion of the project and technical milestones associated with the four tasks are outlined in Table 4 below. All work will be completed by January 2025. This schedule is reasonably adequate to complete proposed project and achieve project goals and objectives.

Table 4: Estimated Timeline for Project Milestone

Milestone	Responsible Party	2021				2022				2023				2024
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1-Q4
Task 1: Award Approval and Contract Execution														
1.1 Seek Board Approval to recognize grant & award contract	South Coast AQMD													
1.2 South Coast AQMD staff will work with local governments and commercial gardeners and landscapers to notify them of the incentive program to be offered	South Coast AQMD													
1.3 Staff will work with manufacturers and potential users of the incentives to identify appropriate products to offer under the program	ALL													
1.4 Develop contracts with manufacturers, outreach vendors and licensed scrapper/recycling service providers, as necessary	South Coast AQMD													
Task 2: Implementation in Coachella Valley and the Urban Areas of Riverside County														
2.1 Identify lawn and garden equipment owned by eligible participants that will utilize efficiency upgrades or replacements.	South Coast AQMD													
2.2 Conduct outreach to targeted eligible program participants and open application period to participate.	ALL													
2.3 Coordinate with contracted manufacturers and vendors and inform participants to purchase/exchange at different locations for commercial lawn and garden equipment. Participants pay at various vendor locations, exchanges conducted at point of sale. Staff will work with vendors to review purchase transactions and process for scrapping of old lawn and garden equipment	ALL													
Task 3: Monitor Implementation and Track Progress Within Nonattainment Areas														
3.1 Identify areas needing improvement and any deficiencies in products offered through the incentive program.	South Coast AQMD													
3.2 Monitor efficiency and emission improvements from participants in program. Database will be developed during registration process, scrapping of old equipment, and dispensing of new equipment.	South Coast AQMD													
3.3 Modify incentive program as needed and prepare outreach material for other eligible participants within other non-attainment areas (focusing on EJ and DAC areas) in the Basin.	South Coast AQMD													
3.4 If needed, hold exchange events for commercial lawn and garden equipment exchange.	ALL													
Task 4: Final Assessment and Reporting														
4.1 Determine air quality benefits achieved through the exchange events.	South Coast AQMD													
4.2 Report of air quality benefits to EPA	South Coast AQMD													
4.3 Final Report	South Coast AQMD													

(4) Programmatic Capability and Past Performance

(4-A&B) Past Performances and Reporting Requirements:

South Coast AQMD staff has participated with EPA on several EPA-funded assistance agreements. Table 5 lists five of these agreements, and provides the progress, status, and South Coast AQMD history of meeting the reporting requirements under the agreements.

Table 5: EPA-Funded Assistance Agreements

EPA Agreement and Contact Person	Progress, Status, History
Title: Heavy Duty LNG Trucks EM-00T16601-0 EPA Contact: Gary Lance U.S. EPA Region IX (415) 972-3992	a. The agreement ($7.5 million) replaces 178 HDDTs with 2009 or newer model LNG trucks. b. The program has successfully replaced 345 rather than the originally proposed 178 HDDTs with LNG trucks for a total project cost of $55 million; a ratio of $6 for every dollar of federal funds. c. The program has been completed and a final technical report was submitted to EPA in 2014.
Title: Diesel Emission Reduction Projects EM-00T34701-0 EPA Contact: Gary Lance U.S. EPA Region IX (415) 972-3992	a. The agreement ($5 million) is to (1) install a shore power infrastructure, (2) replace 25 HDDTs with 2010 compliant HHDDTs, (3) replace and demonstrate up to 28 UPS diesel delivery trucks with zero-emission vehicles, and (4) demonstrate a combined PDF and DeNOx system on a tug boat. b. As of June 2016, all except the fourth project have been completed resulting in the installation of a shore power infrastructure, replacement of 25 HHDDTs with 2010 compliant diesel trucks, and replacement of 40 rather than the originally proposed 28 UPS diesel delivery trucks with zero-emission trucks. The fourth project was terminated due to inactivity of the contractor, and funds were reallocated, upon approval from EPA, to replace 26 older diesel school buses with 2014 or newer natural gas school buses. c. The progress of this agreement is reported in quarterly reports. A final technical report will be submitted at the end of the program
Title: On-Road Heavy-Duty Vehicle and School Bus Replacement Project (DE-99T07001) EPA Contact: Gary Lance U.S. EPA Region IX (415) 972-3992	a. The agreement ($502,240) replaces eight Type D diesel school buses with low emission natural gas buses and repowers or replaces five Type C diesel school buses with electric school buses. b. As of June 2016, the eight Type D diesel school buses have been replaced for a project cost of $1,416,000, a ratio of $6.6 to every $1 of federal funds. The five Type C diesel school buses are being repowered or replaced with electric school buses at a project cost of $1,078,000, a ratio of $4 to every $1 of federal funds. c. The progress of this agreement is reported in quarterly reports. A final technical report will be submitted at the end of the program.
Title: PM 2.5 Monitoring (PM 99T09301) EPA Contact: Gary Lance U.S. EPA Region IX Ph: (415) 972-3992	a. PM2.5 monitoring program started in 2007 and is ongoing b. Progress of the program is reported in quarterly data submissions to an EPA data base. The South Coast AQMD receives audits and data validation checks from EPA.
Title: Nitrogen Dioxide Near Roads (XA-00T82301) EPA Contact: Gary Lance Ph: (415) 972-3992 U.S. EPA Region IX	1. Two Year Funding for the program began in 2013 and has been extended through 2016 2. Deployment of 2 NOx, 1 CO and 1 $PM_{2.5}$ monitor per CBSA and the initial submittal of data into AQS. South Coast AQMD has 2 CBSAs

(4-C) Staff Experience, Qualification, Knowledge, and Resources:

South Coast AQMD is the air pollution control agency responsible for monitoring and regulating air pollution in the Basin and the Riverside County portion of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The Basin comprises the Orange County and non-desert portions of Los Angeles, Riverside, and San Bernardino counties. South Coast AQMD jurisdiction is the second most populous urban area in the United States and covers approximately 11,000 square miles with about 17 million residents. The Basin, including Coachella Valley in Riverside County, includes the number one and number five ranked polluted areas for ozone and the number two ranked polluted area for $PM_{2.5}$. South Coast AQMD is also responsible for the development and implementation of the Basin's AQMP for the inclusion in the SIP to attain and maintain NAAQS for ozone and $PM_{2.5}$. The topography and climate of Southern California combined with the growing population, increasing vehicle miles traveled (VMT), goods movement, San Pedro Bay Ports activities, and manufacturing, chemical, and refining industries make the Basin an area of high air pollution. Densely populated areas near intermodal facilities, the Ports of Los Angeles, and Long Beach, and certain industrial areas throughout the Basin, have created a number of EJ and DAC areas throughout the Basin. The impact of air pollution on public health and welfare ranks high among public concerns in California and disproportionately affects the Basin (89% for $PM_{2.5}$ and 74% for 8-hour ozone on population-weighted basis) more than the rest of California. Since 2000, CARB has linked air pollution in California to high annual cases of premature deaths, asthma attacks and other lower respiratory symptoms, school truancy, and missed work days. Despite the last two decades of aggressive efforts to reduce air pollution, the Basin still has some of the worst air quality in the U.S. based on the number of days the NAAQS for ozone and $PM_{2.5}$ are exceeded.

South Coast AQMD has a long history of successfully collaborating with stakeholders to reduce emissions from a variety of mobile and stationary source programs. South Coast AQMD is successfully implementing several air quality incentive programs such as the Healthy Hearths Natural Gas Fireplace Sets, residential yard equipment exchange programs, commercial lawn and garden pilot programs, residential weatherization program and the Enhanced Fleet Modernization Program. South Coast AQMD is concluding an EPA Air Shed Grant received in 2010. The project included incentive programs for the following activities in the two EJ communities San Bernardino and Boyle Heights.

- Vehicle Maintenance (aqueous brake cleaning) and Auto Refinishing (laser spray guns)
- Commercial Building Green Cleaners
- Low Emission Wood Burning Fireplace and Stove Voucher Program
- Electric Yard Equipment Exchanges for Residential Lawn Mowers and Commercial Leaf Blowers
- Boiler and Process Heater Efficiency Upgrades/Replacements
- Architectural Coating Rebates
- Air Filtration in Schools
- Commercial Lawn Mowers
- Weatherization Program for Homes Adjacent to Freeways and Intermodal Facilities

Implementation of the previous EPA Air Shed Grant has provided additional experience, understanding and lessons learned on implementing successful Air Shed Grant projects. The South Coast AQMD staff implemented the previous EPA Air Shed Grant through its Clean Communities Plan. The South Coast AQMD staff learned that traditional outreach approaches to encourage participating were not always sufficient to gain the trust of businesses to participate in various programs. South Coast AQMD staff is proposing to maintain the focus on environmental communities but expand the program to be inclusive of nonattainment areas throughout the Basin. The previous Air Shed Grant focused on only two EJ communities, which limited the number of potential participants.

Over the last decade South Coast AQMD has thoroughly demonstrated its capabilities and expertise to successfully plan, implement, and administer similar incentive programs. Our highly technical South Coast AQMD staff has the resources necessary to meet the goals of the proposed project. As stated previously, South Coast AQMD will administer project funds and provide comprehensive project management including managing EPA grants, preparing and managing contracts established for the program, and monitoring the progress of the project. The proposed project will be implemented by a program supervisor, a deputy executive officer, a financial specialist, several air quality specialists, a staff assistant, a deputy district counsel, and inspectors. Project staff for any program activities will be selected from South Coast AQMD's experienced staff. Several air quality specialists and supervisors with incentive program expertise will work to administer monitor and manage the day-to-day activities of the incentive programs. Staff will partially include the following.

(5) Budget

(5-A) Budget Detail:

The majority of EPA grant funds will be used directly towards funding electric lawn and garden replacements. Only 6% of the requested funds will be allocated for administrative costs. Additionally, South Coast AQMD will cost share the remaining portion of the administrative costs and a portion of the replacement equipment cost. Program participants will cost-share the remaining replacement equipment cost.

(5-B) Procedures for Efficient Expenditures:

After initial allocation of grant funding, staff will monitor the incentive program to assess the effectiveness of the incentives, identify what worked well and modify as needed (see Table 4, Task 3 above). Further or alternative outreach will be conducted if it is determined that target participants are not aware of the funding opportunity. Modifications may be made to generate increased interest and/or to greater enhance emission reductions achieved through program (e.g. different incentives for higher emitting pieces of equipment).

(5-B&C) Reasonableness of Costs:

Administrative costs for the proposed program are expected to be $317,104.59. South Coast AQMD will cost-share $149,168.78 of the administrative costs leaving $167,935.81 to be funded by the grant. Contractual funding makes up more than 92% of the proposed funding. The contracts for the Commercial Lawn and Garden Equipment Incentive & Exchange Program will be agreements between South Coast AQMD and equipment manufacturers, outreach vendors and recycler/scrappers. South Coast AQMD will verify that all requirements have been satisfied. South Coast AQMD is not requesting travel, equipment or supplies costs for this proposal.

Table 6: Itemization of Costs

Line Item and Itemized Cost	EPA Funding	Voluntary Cost-Share (South Coast AQMD)*	Other Leveraged Funds*
Personnel			
Program Manager @ $75.27/hour			
400 hours	$30,108		
Program Supervisor @ $61.52/hour			
500 hours	$30,760		
Air Quality Specialist @ $49.25/hour			
600 hours	$29,550		
Contracts Assistant @ $26.87/hour			
600 hours	$16,122		
PERSONNEL COSTS	$106,540		
FRINGE BENEFITS (64.03% of Salaries)	$61,395.81	$6,821.76	
INDIRECT COSTS (81.454% of Salaries & Fringe Base)		$142,347.02	
Contractual			
Commercial Lawn and Garden Equipment Incentive & Exchange Program	$2,000,000	$1,000,000	$1,000,000
Service Provider		$20,000	
TOTAL CONTRACTUAL	$2,000,000	$1,020,000	$1,000,000
TOTAL FUNDING	$2,167,935.81	$1,169,168.78	$1,000,000
TOTAL PROJECT COST (Federal and Non-Federal)	**$4,337,104.59**		

*- Other leverage funding does include anticipated discounts provided by equipment manufacturers to participate within the program.

6) Attachments

- **a)** Emission Reduction Calculation Descriptions
- **b)** Resumes